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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/322,283	05/28/1999	DAVID L. ROLLINS	12-0895	7766

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EXAMINER

SEDIGHIAN, REZA

ART UNIT

PAPER NUMBER

2633

/3

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/322,283	ROLLINS, DAVID L.
	Examiner	Art Unit
	M. R. Sedighian	2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 05 May 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-5, 7 and 12-24 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-5, 7 and 12-24 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4) Interview Summary (PTO-413) Paper No(s) _____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____.

1. This communication is responsive to applicant's 5/5/03 response and remarks in the application of David L. Rollins. Claims 1-5, 7, and 12-24 are now pending.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3-4 and 16-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 3-4 and 16-18, it is not clear about "... a wavelength division multiplexer (WDM) ...". As it is shown in fig. 3, WDM 58 functions as a demultiplexer to demultiplex the signals so that they can be further detected by the photodetectors, therefore, the bias control circuit includes a wavelength division demultiplexer and a pair of photodetectors.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by Taneya et al. (US patent No: 5,457,561).

Regarding claim 12, Taneya discloses an optical transmitter (300, fig. 5) including an optical modulator (301, fig. 5) for modulating an RF input signal (302, fig. 5) onto an optical carrier having multiple wavelengths (col. 9, lines 6-9, note that laser 300 can be tuned), an

optical receiver (310, fig. 5) for demodulating (311, fig. 5) the RF modulated optical signal and providing an RF output signal (col. 12, lines 26-27), and an optical link that is free space (col. 8, lines 20-21).

6. Claims 13 and 22-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Nemecek et al. (US patent No: 5,953,139).

Regarding claim 13, Nemecek discloses an optical transmitter (12, fig. 2) including an optical modulator (38, fig. 2) for modulating an RF input signal (39, fig. 2) onto an optical carrier having multiple wavelengths (col. 4, lines 17-30), an optical receiver (24, fig. 1) for demodulating the RF modulated optical signal and providing an RF output signal (col. 2, lines 59-60), an optical link (17, fig. 1), wherein the modulator is a Mach-Zehnder modulator (col. 3, line 22) having an RF input port (39, fig. 2), a bias voltage input port (45, fig. 2), an optical carrier input port (35, fig. 2), and an optical output port (13, fig. 2).

Regarding claim 22, Nemecek discloses an optical transmitter (12, figs. 1, 2), comprising: a Mach-Zehender modulator (col. 3, line 22 and 38, fig. 2) having an RF input port (39, fig. 2), a bias voltage input port (45, fig. 2), an optical carrier input port (35, fig. 2), and an optical output port (13, fig. 2); and means for providing two optical sources (12, fig. 1) having different wavelengths (λ_1, λ_2 , fig. 1).

Regarding claim 23, Nemecek discloses a single laser (34, fig. 2) which produces two optical carriers of different wavelengths (col. 4, lines 17-20).

Regarding claim 24, Nemecek discloses a wavelength division multiplexer (14, fig. 1) and two optical sources (12, figs. 1, 2)

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-2, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nemecek et al. (US patent No: 6,163,396) in view of Ouchi et al. (US Patent No: 5,654,814).

Regarding claims 1, Nemecek discloses an optical transmitter (fig. 13), comprising: a Mach-Zehnder optical modulator (col. 2, line 27-31 and 422, figs. 13) having an RF input port (411, fig. 13), a bias voltage input port (429, fig. 13), an optical carrier input port (the port that gets the optical signal from the laser 420), and an output port (output port of modulator 422). Nemecek differs from the claimed invention in that Nemecek does not disclose a WDM multiplexer having two input ports and an output port that is coupled to the optical carrier port of modulator. Ouchi teaches an optical modulator (4, fig. 2) having an optical carrier port that is connected to a multiplexer that multiplexes two input optical signal from two different sources (col. 9, lines 4-22). Therefore, it would have been obvious to an artisan at the time of invention to incorporate an optical transmission and multiplex system that can provide an optical multiplex carrier input signal such as the one of Ouchi for the optical carrier input signal in the modulation system of Nemecek to provide a high bandwidth transmission system.

Regarding claim 2, Nemecek discloses a bias control circuit (428, fig. 13) coupled to the bias voltage input port (429, fig. 13).

Regarding claim 5, Ouchi discloses two optical carrier sources are provided by lasers of different wavelengths (col. 9, lines 10-17).

Regarding claim 7, Nemecek differs from the claimed invention in that Nemecek does not disclose an optical amplifier at the output of modulator. Nemecek discloses optical line amplifiers (713, 720, fig. 20). Incorporating optical amplifiers along the fiber transmission line, or after optical modulator, is well known in the field of optical data communication. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate an optical amplifier such as amplifier 713 at the output of the optical modulator in the transmission system of Nemecek in order to boost the light signals to further increase the transmission distance.

8. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nemecek et al. (US patent No: 5,953,139) in view of Ouchi et al. (US Patent No: 5,654,814).

Regarding claim 14, Nemecek differs from the claimed invention in that Nemecek does not disclose the optical transmitter include a WDM and a plurality of sources of carrier signals at different wavelengths. Ouchi teaches an optical modulator (4, fig. 2) having an optical carrier port that is connected to a multiplexer that multiplexes two input optical signal from two different sources (col. 9, lines 4-22). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate an optical transmission and multiplex system that can provide an optical multiplex carrier input signal such as the one of Ouchi for the optical carrier input signal in the modulation system of Nemecek to provide a high bandwidth transmission system.

Regarding claim 15, Nemecek discloses a bias control circuit (44, fig. 2) that is applied to the bias voltage input port (45, fig. 2).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (703) 308-9063. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703) 305-4729. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

M. R. Sedighian
M.R. SEDIGHIAN
Patent Examiner

Art Unit: 2633